Syllabus

NOTE: Where it is feasible, a syllabus (headnote) will be released, as is being done in connection with this case, at the time the opinion is issued. The syllabus constitutes no part of the opinion of the Court but has been prepared by the Reporter of Decisions for the convenience of the reader. See *United States* v. *Detroit Timber & Lumber Co.*, 200 U. S. 321, 337.

SUPREME COURT OF THE UNITED STATES

Syllabus

KANSAS *v.* COLORADO

ON EXCEPTIONS TO REPORT OF SPECIAL MASTER

No. 105, Orig. Argued October 4, 2004—Decided December 7, 2004

Kansas and Colorado entered into the Arkansas River Compact (Compact) in 1949, but disagreements over the equitable distribution of the river's upper waters persisted. In 1985, Kansas charged that Colorado had violated the Compact by drilling new irrigation wells that, in Compact Art. IV–D's words, "materially depleted" the river water otherwise available "for use" by Kansas' "water users." Accepting the recommendation set forth in the First Report of the Special Master to find that Colorado had unlawfully depleted the river in violation of Art. IV–D, this Court remanded the case for remedies. *Kansas* v. *Colorado*, 514 U. S. 673, 694 *(Kansas I)*. In proposing remedies in his Second and Third Reports, the Master said that Colorado's Compact violation had occurred between 1950 and 1994; recommended that Colorado pay Kansas damages; divided the water losses into six categories, calculating damages somewhat differently for each; and urged that Kansas be awarded prejudgment interest on damages for losses incurred from 1969 through 1994 (the judgment's date). The Court subsequently adopted these recommendations with one exception: It held that prejudgment interest would run from 1985 (not 1969). *Kansas* v. *Colorado*, 533 U. S. 1, 15–16 *(Kansas III)*. The Master has now filed a Fourth Report setting forth his resolution of the remaining issues. Kansas takes exception to several of his recommendations.

Held:

1. Kansas' request to appoint a River Master to decide various technical disputes related to decree enforcement is denied. This Court has appointed River Masters to help resolve States' water-related disputes only twice before, *Texas* v. *New Mexico*, 482 U. S. 124, and *New Jersey* v. *New York*, 347 U. S. 995, each time on the Special Master's recommendation, always as a discretionary matter,

and only when convinced that such an appointment would significantly aid resolution of further disputes, see *Vermont* v. *New York*, 417 U. S. 270, 275. The Court is not convinced that such an appointment is appropriate here. For one thing, further disputes in this case, while technical, may well require discretionary, policy-oriented decisionmaking directly and importantly related to the underlying legal issues. These potential disputes differ at least in degree from those that the Court has asked River Masters to resolve in past cases. See, *e.g.*, *Texas* v. *New Mexico*, 482 U. S., at 134, 135–136. Administration of the present decree will involve the highly complex computer-run Hydrologic-Institutional Model (H-I Model or Model), and resolution of many modeling disputes may well call for highly judgmental determinations of matters that are more importantly related to the parties' basic legal claims. For another thing, the need for a River Master here is diminished by the fact that the parties may be able to resolve future technical disputes through binding arbitration under Compact Art. VII or through less formal dispute-resolution methods like joint consultation with experts, negotiation, and informal mediation. The Special Master recommended all of these alternatives, while opposing appointment of a River Master because it would "simply" make it "easier to continue this litigation." Fourth Report 136. Pp. 3–5.

2. Kansas' exception to the Special Master's prejudgment interest calculation is overruled. The calculation and Kansas' objection grow out of this litigation's special history. The Master initially calculated prejudgment interest on the basis of "considerations of fairness," Third Report 97, dividing the prejudgment period into three temporal subcategories: (1) an Early Period between 1950, when Colorado's unlawful water depletion began, and 1968, when Colorado should first have known about it; (2) a Middle Period between 1969 and 1985, when Kansas filed its complaint; and (3) a Late Period between 1985 and 1994, when judgment was entered, *id.*, at 107. The Master adjusted damages from *all three* periods for inflation, but he awarded additional prejudgment interest only from 1969 to the judgment date, for a total damages award, including prejudgment interest, of $38 million. *Ibid.* The *Kansas III* Court accepted the Master's equitable approach, 533 U. S., at 11, but applied its own "considerations of fairness" in concluding that "prejudgment interest should begin to accrue" as of 1985, *id.*, at 12–13, and n. 5. On remand, the Master therefore calculated prejudgment interest from 1985 onward on Late Damages alone. Kansas' argument that the Master should have calculated prejudgment interest (from 1985) *on all damages—i.e.*, on Early, Middle, and Late Damages—would make good sense in an ordinary case. But the question here is not about the ordinary case,

but rather what *Kansas III*'s prejudgment interest determination meant in that case's special context. For one thing, the Court there did not seek to provide compensation for all of Kansas' lost investment opportunities; rather, it sought to weigh the equities. For another, it was apparent that the Master's earlier determination involved *both* a decision about *when* to begin to calculate interest (1969) and *what* to calculate that interest upon (Middle and Late Damages *only*). Saying nothing about the Master's total exemption of Early Damages, *id.*, at 14, the Court changed the *when* (from 1969 to 1985), but not the methodology for calculating the *what*. In context, the Court's silence fairly implies acceptance, not rejection, of the Master's underlying methodology, which now yields a post-1985 interest calculation based upon Late Damages *only*. This view is reinforced by the resulting numbers. Were the Court now to accept Kansas' argument, the final damages award would be roughly $53 million, not the $38 million originally calculated by the Master. The Court cannot reconcile that numerical result with its acceptance in *Kansas III* of the Master's equitable approach and with its own equitable determination, which implied a modest adjustment of the $38 million award in *Colorado*'s favor, not, as Kansas now seeks, a major adjustment of the award in Kansas' favor. *Ibid.* Pp. 6–10.

3. Kansas' exception to the Special Master's recommendation that the H–I Model be used with a 10-year measurement period to determine Colorado's future Compact compliance is overruled. Kansas seeks, in place of the 10-year period, a 1-year period. Kansas points to Compact Art. V–E(5), which says that there "shall be no allowance for accumulation of credits or debits for or against either State." Kansas argues that a 10-year period averages out oversupply and undersupply during the interim years, with the likely effect of awarding Colorado a "credit" in dry years for oversupply in wet years. Adding that Art. IV–D forbids Colorado to deplete the river water's "availability for use," Kansas says that the 10-year period effectively frees Colorado from the obligation to compensate Kansas for years (within the 10-year period) when overpumping may have made water "unavailable" for Kansas' use. Kansas also notes that the parties and the Master have heretofore used a 1-year measuring period in calculating past damages. The Court is not persuaded by these arguments. The Compact's literal words are not determinative. Its language essentially forbids offsetting debits with "credits," but it does not define the length of time over which a "credit" is measured. *Any* measurement period inevitably averages interim period flows just as it overlooks interim period lack of water "availability." At the same time, practical considerations favor the Master's approach. The Master found that Model results over measurement periods less than 10

years are highly inaccurate, but that the Model functioned with acceptable accuracy over longer periods of time. Moreover, Kansas is unlikely to suffer serious harm through use of a 10-year period because Colorado has developed a river water replacement plan to minimize depletions. Assuming, as Kansas argues, that the Compact's framers expected annual measurement with no carryover from year to year, those framers were likely unaware of the modern difficulties of complex computer modeling and, in any event, would have preferred accurate measurement. The fact that both parties earlier agreed to use annual measurement is not determinative here because that stipulation was made before the Master fully examined the model's accuracy. Pp. 10–14.

4. Also overruled is Kansas' exception to the Special Master's recommendation that the final amounts of water replacement plan credits to be applied toward Colorado's compact obligations be determined by the Colorado Water Court and appeals therefrom. Kansas argues that the Water Court is a state court, that Colorado cannot be its own judge in a dispute with a sister State, *West Virginia ex rel. Dyer* v. *Sims*, 341 U. S. 22, 28, and that this Court must pass on every essential question, *e.g.*, *Oklahoma* v. *New Mexico*, 501 U. S. 221, 241. Kansas' objection founders, however, upon additional language in the Master's full recommendation—and his attendant analysis—making clear that all replacement credits are subject to Kansas' right to seek relief under this Court's original jurisdiction; that Colorado's replacement plan rules affect the rights, not only of Kansas water users, but also of *Colorado* senior water users; that both groups have similar litigation incentives; and that permitting the Colorado Water Court initially to consider challenges to credit allocations will help prevent inconsistent determinations. The full recommendation will help avoid potential conflict and adequately preserves Kansas' rights to contest any adverse Water Court determination. Pp. 14–15.

5. Kansas' exception to the Special Master' finding that Colorado complied with the Compact between 1997 and 1999 is overruled. Kansas' objection rests on its claim that the Master cannot use an accounting period longer than one year. This Court has already found against Kansas on that matter. P. 15.

6. Kansas' exception to the Special Master's refusal to make recommendations on 15 disputed issues is overruled. As the Master found, there are good reasons not to decide these issues immediately. The issues in the second category, which involves challenges to the accuracy of the figures used to determine whether Colorado depleted the river between 1997 and 1999, are mostly moot. Moreover, the passage of time will produce more accurate resolution of disputes in the first and third categories (and any future second-category dis-

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putes). Pp. 15–17.

Kansas' exceptions overruled; Special Master's recommendations accepted; and case recommitted to Special Master.

BREYER, J., delivered the opinion of the Court, in which REHNQUIST, C. J., and O'CONNOR, SCALIA, KENNEDY, SOUTER, and GINSBURG, JJ., joined and in which STEVENS and THOMAS, JJ., joined except for Part II. THOMAS, J., filed an opinion concurring in part and concurring in the judgment. STEVENS, J., filed an opinion concurring in part and dissenting in part.

NOTICE: This opinion is subject to formal revision before publication in the preliminary print of the United States Reports. Readers are requested to notify the Reporter of Decisions, Supreme Court of the United States, Washington, D. C. 20543, of any typographical or other formal errors, in order that corrections may be made before the preliminary print goes to press.

SUPREME COURT OF THE UNITED STATES

No. 105 Orig.

STATE OF KANSAS, PLAINTIFF *v.* STATE OF COLORADO

ON BILL OF COMPLAINT

[December 7, 2004]

JUSTICE BREYER delivered the opinion of the Court.

We again consider a long-running water dispute between Colorado and Kansas. The water is that of the Arkansas River, once proudly called the "Nile of America." The river originates high in the Rocky Mountains. It runs eastward through Colorado, Kansas, Oklahoma, and Arkansas, before joining the Mississippi near the town of Arkansas Post. For decades, Kansas and Colorado disagreed about the division of its upper waters. See *Kansas* v. *Colorado*, 206 U. S. 46 (1907); *Colorado* v. *Kansas*, 320 U. S. 383 (1943). In 1949, they entered into an interstate compact. See Arkansas River Compact (Compact), 63 Stat. 145. (agreeing to "[e]quitably divide and apportion" the waters (internal quotation marks omitted)). But the disagreements have persisted.

Present proceedings began in 1985, when Kansas charged that Colorado had violated the Compact. Kansas pointed out that Compact Art. IV–D says:

> "This Compact is not intended to impede or prevent future beneficial development of the Arkansas River basin in Colorado and Kansas by Federal or State agencies, by private enterprise, or by combinations

> thereof, which may involve construction of dams, reservoir, and other works for the purposes of water utilization and control, as well as the improved or prolonged functioning of existing works: Provided that *the waters of the Arkansas River,* as defined in Article III, *shall not be materially depleted in usable quantity or availability for use to the water users in Colorado and Kansas under this Compact by such future development or construction.*" *Id.,* at 147 (emphasis added and internal quotation marks omitted).

Kansas submitted that Colorado "development," in particular the drilling of new irrigation wells, had "materially depleted" the water otherwise available "for use" by Kansas' "water users." Our appointed Special Master agreed, recommending that we find that Colorado had unlawfully depleted the river in violation of Art. IV–D. 2 First Report of Special Master 336 (hereinafter Report). We accepted the Special Master's recommendations and remanded the case for remedies. *Kansas* v. *Colorado*, 514 U. S. 673, 694 (1995) (Kansas I).

The Special Master set forth proposed remedies in his Second and Third Reports. He said that Colorado had overextracted more than 400,000 acre-feet of usable river flow between 1950 and 1994. Second Report 112. He recommended that Colorado pay Kansas monetary damages to make up for the depletions. Third Report 119. He divided losses into six categories, calculating damages somewhat differently in each category. See *id.,* at 120. And he recommended that Kansas be awarded prejudgment interest on damages reflecting losses incurred from 1969 through 1994 (the date of the judgment). *Id.,* at 107. We subsequently adopted the Special Master's recommendations with one exception; we held prejudgment interest would run from 1985 (not 1969). *Kansas* v. *Colorado*, 533 U. S. 1, 15–16 (2001) (Kansas III). See *infra,* at

6–8. And we remanded the case. 533 U. S., at 20.

The Master has now filed a Fourth Report setting forth his resolution of the remaining issues. Kansas takes exception to several of the Fourth Report's recommendations. We overrule Kansas' exceptions and adopt all of the Special Master's recommendations.

I

Kansas asked the Special Master to recommend that we appoint a River Master with authority to decide (within clear error limits) various technical disputes related to decree enforcement. See *Texas* v. *New Mexico*, 482 U. S. 124, 134 (1987) (appointing a River Master to "make the calculations provided for in [a] decree" concerning the Pecos River). The Special Master rejected Kansas' request, recommending instead that "the Court retain continuing jurisdiction in this case for a limited period of time" to permit the Special Master himself to resolve any lingering issues (subject, of course, to this Court's review). Fourth Report 135. Kansas here renews its request for appointment of a River Master.

We recognize that this Court has previously appointed a River Master to help resolve water-related disputes among States. *Texas* v. *New Mexico*, *supra*, at 134–135; *New Jersey* v. *New York*, 347 U. S. 995, 1002–1004 (1954). But it has done so only twice before, each time on recommendation of the Special Master, always as a discretionary matter, and only because it was convinced that such an appointment would significantly aid resolution of further disputes. See *Vermont* v. *New York*, 417 U. S. 270, 275 (1974) *(per curiam)* ("[I]t is a rare case" where we will install a River Master). We are not convinced that such an appointment is appropriate here.

For one thing, further disputes in this case, while technical, may well require discretionary, policy-oriented decisionmaking directly and importantly related to the

underlying legal issues. In this respect, potential disputes in this case differ at least in degree from those that we have asked River Masters to resolve. Implementation of the Pecos River Decree, for example, involved application of a largely noncontroversial mathematical curve. The curve correlates inflows at various New Mexico River locations with expected outflows so that engineers can estimate, for any given inflow, the amount of water likely available for Texas' use. See *Texas* v. *New Mexico*, 462 U. S. 554, 572–573 (1983); see also *Texas* v. *New Mexico*, 446 U. S. 540 (1980) *(per curiam)*. Lingering disputes between Texas and New Mexico, we thought, would involve not the curve's shape but whether officials had properly measured the flows. 482 U. S., at 134–135. Although these disputes might call for a "degree of judgment," they would often prove capable of mechanical resolution and would usually involve marginal calculation adjustments. *Id.*, at 134; see *id.*, at 135–136; Fourth Report 128 (The Pecos River Master "does not adjudicate the kinds of disputes" potentially at issue here).

Administration of the decree in this case, by contrast, will involve not a simple curve but a highly complex computer model, the Hydrologic-Institutional Model (H–I Model or Model). The H–I Model seeks to determine just what the precise water flows into Kansas *would have been* had Colorado not dug new wells after 1949. See 2 First Report 231. Modeling disputes—and there have been many—involve not just measurement inputs, but basic assumptions underlying the model. See, *e.g.*, *Kansas I*, 514 U. S., at 685–687; 2 First Report 237–240; Fourth Report 123–124. Their resolution may well call for highly judgmental decisionmaking about matters that (compared to the Pecos) are more importantly related to the parties' basic legal claims. See Fourth Report 128.

Moreover, the need for a River Master is diminished by the fact that the parties may find it possible to resolve

future technical disputes through arbitration. The interstate compact itself creates an Arkansas River Compact Administration (Administration) empowered to resolve differences arising under the Compact. Art. VIII, 63 Stat. 149. The Administration consists of three representatives from each State and a representative of the United States acting as chair. Art. VIII–C. Each State has one vote; the United States has no vote. Art. VIII–D. In case of an equally divided vote, the Administration (with the consent of both States) may refer a matter for resolution to the "Representative of the United States or other arbitrator or arbitrators." *Ibid.* (internal quotation marks omitted). The arbitrator's determinations are binding. *Ibid.*

At oral argument, counsel for Kansas suggested a willingness to use arbitration, noting that "in the one case [he was] aware of, Kansas' suggestion of doing an arbitration was rejected by Colorado." Tr. of Oral Arg. 17. Colorado's counsel responded that Colorado had proposed "that binding arbitration be used and has committed itself to participate in that." *Id.*, at 26; see also Reply Brief of Colorado Opposing Exceptions 15. These comments suggest that neither party opposes arbitration, and indeed that Colorado would accept it. Nor have the parties expressed any opposition to the use of other less formal means to resolve disputes, such as joint consultation with experts, negotiation, and informal mediation. See, *e.g.*, *Kansas* v. *Nebraska*, 538 U. S. 720 (2003) (Kansas, Colorado, and Nebraska resolved Republican River dispute by settlement and stipulation); Fourth Report 134 (discussing ongoing "joint efforts" and "cooperation" among the States to resolve lingering disputes over the waters of the Republican River).

The Special Master recommended both binding arbitration and these other less formal methods as alternatives, while opposing appointment of a River Master and observing that such an appointment would "simply" make it

"easier to continue this litigation." *Id.*, at 136.

For all of these reasons, we deny Kansas' River Master request.

II

Kansas takes exception to the Special Master's prejudgment interest calculation. The calculation and the objection grow out of the special history of this litigation.

After we initially remanded this case for remedial determinations, see *Kansas I, supra,* the Special Master found that Colorado's unlawful water depletion had harmed Kansas beginning in 1950 and that Colorado must pay monetary damages reflecting that harm. Kansas asked the Special Master to award prejudgment interest on those damages incurred before entry of the judgment in 1994. Colorado replied that the Compact—like the common law—did not foresee interest payments in respect to unliquidated claims, particularly where, as here, damages were highly speculative. And even with the best of good will, said Colorado, it still could not have known prior to the filing of the complaint (in 1985) how much it owed Kansas. See Third Report 92–94; *Kansas III*, 533 U. S., at 11–13; Brief for Defendant in *Kansas* v. *Colorado*, O. T. 2000, no. 105, orig., pp. 28–32.

The Special Master resolved the argument by deciding to calculate pre-judgment interest on the basis of what he called "'considerations of fairness.'" Third Report 97 (quoting *Board of Comm'rs of Jackson Cty.* v. *United States*, 308 U. S. 343, 352 (1939)). In a kind of Solomonic compromise, he divided the prejudgment period into three temporal subcategories: (1 an Early Period, the period between 1950, when Colorado's unlawful water depletion began, and 1968, when Colorado should first have known about it; (2 a Middle Period, the period between 1969 and 1985, when Kansas filed its complaint; and (3 a Late Period, the period between 1985 and 1994, when judgment

was entered. He adjusted damages from *all three* periods (Early, Middle, and Late) for inflation. But he awarded additional prejudgment interest, reflecting Kansas' loss of use of the money, "only from 1969 to the date of judgment," Third Report 107. Both Kansas and Colorado interpreted his order as awarding interest *only* on Middle and Late Damages (1969–1994), *not* on Early Damages (1950–1968). *Kansas III*, Exceptions and Brief for Plaintiff Kansas 9; App. to Fourth Report 12–13. The resulting total damages award, including prejudgment interest, came to $38 million. *Ibid.*

On appeal to this Court, Colorado attacked the award of *any* prejudgment interest, while Kansas called for *full* prejudgment interest. We accepted the Special Master's equitable approach. We were unable to conclude that Colorado should have known that prejudgment interest would "automatically" be imposed "in order to achieve full compensation." 533 U. S., at 14. But, we added, Colorado did believe (or should have believed) that we would assess "'considerations of fairness'" in order to achieve a just and equitable remedy. *Ibid.* Hence "the Special Master acted properly . . . in only awarding as much prejudgment interest as was required by a balancing of equities." *Ibid.*

The Special Master, we found, properly refused to "award prejudgment interest for any years before either party was aware of the excessive pumping in Colorado." *Id.*, at 15. We then applied our own "considerations of fairness" and concluded that "prejudgment interest should begin to accrue," not as of 1969 (the Special Master's date), but as of 1985. *Id.*, at 14–15. We wrote in an accompanying footnote:

> "JUSTICE O'CONNOR, JUSTICE SCALIA, and JUSTICE THOMAS would not allow any prejudgment interest. . . . JUSTICE KENNEDY and The CHIEF JUSTICE are of the opinion that prejudgment interest should

> run from the date of the filing of the complaint [1985]. JUSTICE SOUTER, JUSTICE GINSBURG, JUSTICE BREYER [and JUSTICE STEVENS] . . . agree with the Special Master's view that interest should run from the time when Colorado knew or should have known that it was violating the Compact [1969]. In order to produce a majority for a judgment, the four Justices who agree with the Special Master have voted to endorse the position expressed in the text." *Id.*, at 15 n. 5.

On remand, the Special Master, seeking to remain faithful to our determination, calculated prejudgment interest from 1985 onward, and calculated that interest on (post-1985) Late Damages alone, *i.e.*, completely exempting both Early Damages and Middle Damages from prejudgment interest. Kansas now objects to this last-mentioned limitation; it challenges the sum upon which post-1985 interest runs. Kansas says the Special Master should have calculated prejudgment interest (from 1985) *on all damages, i.e.*, on Early Damages, Middle Damages, and Late Damages alike. After all, says Kansas, "[p]rejudgment interest serves to compensate for the loss of use of money due as damages . . . thereby achieving full compensation for the injury those damages are intended to redress," *West Virginia* v. *United States*, 479 U. S. 305, 310–311, n. 2 (1987) (citing Comment, Prejudgment Interest: Survey and Suggestion, 77 Nw. U. L. Rev. 192 (1982)). See Exceptions and Brief for Plaintiff Kansas 29. Kansas lost the "use of" *all* the "money due as damages," *i.e.* Early and Middle Damages as well (which were "due" at least by 1985). Why then, asks Kansas, calculate post-1985 interest on only *some* of the damages then due?

Kansas' argument would make good sense in an ordinary case. But the question here is not about the ordinary case, but rather what the *Kansas III* paragraph we quoted

above means in context. And the *Kansas III* context is a special one.

For one thing, like the Special Master, we did not seek to provide compensation for all lost investment opportunities; rather, we sought to weigh the equities. For another, it was apparent that the Special Master's earlier determination involved *both* a decision about *when* to begin to calculate interest (1969) and *what* to calculate that interest upon (Middle Damages and Late Damages *only*). Brief for Plaintiff in *Kansas* v. *Colorado*, O. T. 2000, no. 105, orig., pp. 9, 25, n. 8. All damages incurred before his selected date were totally exempt from interest. Kansas contested the *when* by arguing that we should award interest for the entire period. Kansas also contested the *what* by arguing that, even accepting the Special Master's preferred date, interest should run on Early Damages as well as Middle and Late Damages. See *id.*, at 25, n. 8 ("Even if a defendant's good-faith ignorance of its breach were a valid reason to deny prejudgment interest, it would not justify the Special Master's recommendation to deny Kansas compensation for its loss of use of money [reflecting Early Damages] after 1968").

In overruling Kansas' exception and sustaining Colorado's exception, we said nothing about the Special Master's total exemption of Early Damages. 533 U. S., at 14. Thus, we changed the *when* (from 1969 to 1985) in *Kansas III*, but (despite Kansas' argument) we did not change the methodology for calculating the *what*. In context, our silence fairly implies acceptance, not rejection, of the Special Master's underlying methodology. Moving the date forward thus meant moving the exemption period forward as well. And that methodology now yields a post-1985 interest calculation based upon Late Damages *only*.

This view of our prior opinion is reinforced by the resulting numbers. The Special Master's original 1969 date (and methodology) produced a total damages award to

Kansas, including prejudgment interest, of about $38 million. Were we to accept Kansas' argument (and calculate post-1985 interest on *all* damages), the final damages award would be roughly $53 million. App. to Fourth Report 12. We cannot reconcile that numerical result with our acceptance in *Kansas III* of the Special Master's equitable approach and with our own equitable determination. That determination implied a modest adjustment of the $38 million award in *Colorado*'s favor, not, as Kansas now seeks, a major adjustment of the award in its own favor. App. to Fourth Report 12.

Consequently, we overrule Kansas' objection.

III

Kansas and Colorado have agreed to use a computer model, the H–I Model, to measure Colorado's future Compact compliance. This highly complex set of computer programs determines whether Colorado's post-1949 wells deplete the river of usable water that the Compact makes available for Kansas. It does so by trying to account for almost every Arkansas-River-connected drop of water that arrives in, stays in, or leaves Colorado, whether by way of rain, snow, high mountain streams, well pumping of underground water, evaporation, canal seepage, transmountain imports, reservoir storage, or otherwise. 2 First Report 233–235. With all "switches" turned on, the model predicts how much river water will leave Colorado for Kansas during a given month. *Id.*, at 234–235. To obtain a figure representing an unlawful depletion (or lawful accretion) under the Compact, the Model subtracts from this figure (the actual flow) a number representing a hypothetical prediction of how much water would have flowed into Kansas had Colorado not dug and operated post-1949 wells. The Model obtains this prediction through a computer rerun with the Model's "post-1949 well" switch turned off. *Ibid.* The final figure is then

adjusted to reflect depletions to usable, as opposed to total, flow. App. to Second Report 37.

Not surprisingly, the Model's ability to calculate depletions has proved highly controversial, leading to many model modifications during this litigation. See, *e.g.*, 2 First Report 236–240 (describing Colorado's objections to the original model). The Special Master has recommended use of the model together with a 10-year measurement period to determine the amounts of any future depletions. Fourth Report 139. That is to say, a determination of whether Colorado owes Kansas water in Year 11 will be made by taking the model's total result for Years 1–10, for year 12 by the model's total result for Years 2–11, and so forth. Fourth Report 117; App. to Fourth Report 86, Exh. 14. Kansas takes exception to the 10-year measurement period.

Kansas seeks a measurement period of one year. In support, Kansas points to Compact Art. V–E(5), 79 Stat. 148, which says that there "shall be no allowance or accumulation of credits or debits for or against either State" (internal quotation marks omitted). Kansas argues that a 10-year period averages out oversupply and undersupply during the interim years, with the likely effect of awarding Colorado a "credit" in dry years for oversupply in wet years. Kansas adds that Art. IV–D, 79 Stat. 147 forbids Colorado to deplete the river water's "availability for use." Kansas says that the 10-year measurement period in effect frees Colorado from the obligation to compensate Kansas for years (within the 10-year period) when overpumping may have made water "unavailable[e]" for Kansas' use. Kansas also notes that the parties and the Special Master have used a 1-year measuring period in this litigation for purposes of calculating past damages. See Exceptions and Brief for Plaintiff Kansas 37–40, 43–44.

Like the Special Master, we are not persuaded by Kansas' arguments. The literal words of the Compact are not

determinative. The Compact's language essentially forbids offsetting debits with "credits," but it does not define the length of time over which a "credit" is measured. *Any* period of measurement inevitably averages interim period flows just as it overlooks interim period lack of water "availability." Thus annual measurement offsets and overlooks seasonal differences; seasonal measurement, monthly differences; monthly measurement, weekly differences, and so forth.

At the same time, practical considerations favor the Special Master's measurement approach. Model results over measurement periods of less than 10 years are highly inaccurate. The Special Master found, for example, that the current iteration of the Model, if used to project river diversions (including well pumping) during a single year, produces figures that overpredict actual diversions in some years and underpredict them in others by as much as 22%. Fourth Report 111. Similar inaccuracies plague the Model's projection of actual river flows. *Id.*, at 112. If projected diversions and flows deviate substantially in this way from actual measured diversions and flows, 1-year estimates of final *depletions to usable flow*—the figure that determines Kansas' damages—cannot be accurate. *Id.*, at 115 ("I find that the H–I model is not sufficiently accurate on a short-term basis to be used to determine compact compliance on a monthly or annual basis"). But measured over long periods of time, say, the full 540 months between 1950 and 1994, the Model's predicted and observed diversions "matched almost perfectly." *Id.*, at 114. For this reason, the Master concluded that "[o]nly by using longer term averages do the model simulations more closely match historic data." *Id.*, at 115. Thus, the 10-year measurement period is needed to assure model accuracy.

Nor is Kansas likely to suffer serious harm through use of a 10-year measuring period. That is because Colorado

has developed a water replacement program designed to minimize depletions. See Amended Rules and Regulations Governing the Diversion and Use of Tributary Ground Water in the Arkansas River Basin (Use Rules), App. to Fourth Report 36, Exh. 6; Fourth Report 8–13. The program protects both Kansas water users and *senior* Colorado users by insisting that Colorado users with junior rights (and in particular those who obtain water from post-1949 wells) replace the river water that they use. They must either (1) buy replacement water, say, from the Rockies' western slope or (2) buy land irrigated by pre-1949 wells and remove it from cultivation. *Id.*, at 10–13. In practice, junior users belong to one of three associations that conduct these transactions, reporting the details monthly to the Colorado State Engineer's Office, and receiving replacement "credits," which they divide among their members. *Id.*, at 13.

Were the replacement program and the H–I Model both to work perfectly, the Model's net depletion figure, whether determined each month, each year, or each decade, would be zero (that is, there would be no difference between actual flow and what the flow would have been under pre-compact conditions). Of course, perfection is impossible; and Kansas claims certain defects in the Use Rules. See *id.*, at 27. But operation of the Rules should help to diminish the real amount of any depletion, thereby limiting any negative effect that a 10-year measurement period might have upon Kansas. See *id.*, at 119–120; see also *id.*, at 32. The 1997–1999 results, showing essentially no aggregate depletion, suggest the water replacement program will have this effect. *Ibid.*

Kansas argues that the Compact's framers expected annual measurement. And they quote a Colorado Commissioner as recognizing that there would be "'no carryover from year to year,'" see Exceptions and Brief for Plaintiff Kansas 39 (quoting Joint Exhibit 3, pp. 14–84).

Assuming, *arguendo,* that the framers opposed such carryover, they were likely unaware of the modern difficulties of complex computer modeling. And we believe that those framers, in any event, would have preferred accurate measurement. After all, a "credit" for surplus water that rests upon *in*accurate measurement is not really a credit at all.

Kansas also points out that earlier in this litigation both parties agreed to the use of annual measurement for purposes of calculating past damages. The parties made that stipulation, however, before the Special Master fully examined the model's accuracy. In any event, their previous agreements do not govern this determination.

We overrule Kansas' exception.

IV

As we just mentioned, measuring the depletion caused by Colorado's post-1949 wells involves taking account of Colorado's water replacement program, which credits Colorado with nonArkansas water pumped into the Arkansas and with Arkansas water *not* used because farmers have removed from cultivation lands previously irrigated by *pre*-1949 wells. The Special Master has recommended that "the final amounts of Replacement Plan credits to be applied toward Colorado's compact obligations shall be the amounts determined by the Colorado Water Court, and any appeals therefrom." Fourth Report 138, ¶9. Kansas takes exception to this recommendation.

Kansas points out that the Colorado Water Court is a state court. It says that a "'State cannot be its own ultimate judge in a controversy with a sister State,'" Exceptions and Brief for Plaintiff Kansas 45–46 (quoting *West Virginia ex rel. Dyer* v. *Sims*, 341 U. S. 22, 28 (1951),) and that this Court must "'pass upon every question essential'" to resolving the dispute, Exceptions and Brief for

Plaintiff Kansas 46 (quoting *Oklahoma* v. *New Mexico*, 501 U. S. 221, 241 (1991) (in turn quoting *Kentucky* v. *Indiana*, 281 U. S. 163, 176–177 (1930)). Kansas believes that the Special Master's recommendation violates these well-established principles.

Kansas objection founders, however, upon additional language in the Master's full recommendation. The recommendation adds:

> "This is not to say, however, that the Colorado Water Courts are empowered to make a final determination on any matter essential to compact compliance at the Stateline, or that Colorado's reliance on such Water Court actions will necessarily satisfy its compact obligations. . . . All replacement credits, no matter how determined, are subject to the right of Kansas to seek relief under the Court's original jurisdiction [as set forth in] Section VIII." Fourth Report 138–139, ¶9.

In the cross-referenced Section VIII, the Special Master makes clear that Colorado's replacement plan rules affect the rights, not only of Kansas water users, but also of *Colorado* senior water users; that both groups of water users have similar litigation incentives; and that permitting the Colorado Water Court initially to consider challenges to credit allocations will help prevent inconsistent determinations. *Id.*, at 93–95.

In our view, the Special Master's full recommendation will help to avoid the potential conflict he mentioned. It also adequately preserves Kansas' rights to contest any adverse Water Court determination. We overrule Kansas' exception.

V

The Special Master found that Colorado complied with the Compact for the period 1997–1999. Kansas takes exception on the ground that the Special Master used a

measurement period "greater than one year." Exceptions and Brief for Plaintiff Kansas 47. Kansas concedes that its objection rests upon its claim that the Special Master cannot use "an accounting period longer than one year." *Ibid.* Having found against Kansas on that matter, *supra*, at 14, we must overrule this exception.

VI

At the end of its brief, Kansas lists 15 disputed issues that the Special Master has not yet decided. It groups them into three categories:

> 1. "Disputed H–I Model Calibration Issues" ("[c]alibration procedures, parameters and criteria," "[c]anal capacities," "altered diversion records," "statistical outliers," "Sisson-Stubbs water right" representation);
> 2. "Disputed 1997–1999 Accounting Issues" ("[d]ry-up acreage," Sisson-Stubbs credit," "winter water bookovers" credit);
> 3. "Disputed Future Compliance Issues ("[d]ry-up acreage monitoring," "[d]ry-up credits" and external source "return flow obligations," credit beyond "pre-compact uses," "[s]pecial waters monitoring," winter water release credit timing, "[o]ffset account" accounting procedures, "consumptive use credit and return flow obligations"). Exceptions and Brief for Plaintiff Kansas 48–49.

Kansas takes exception to the Special Master's refusal to make recommendations on these issues now. It points out that we cannot leave unanswered important questions "'essential'" to our "'determination of a controversy'" between the States. *Id.* at 49 (quoting *Oklahoma* v. *New Mexico*, *supra*, at 241). And Kansas asks us to require the Special Master to decide them.

As the Special Master found, however, there are good

reasons not to decide these issues immediately. There is no need to resolve most of the issues in the second category. They involve challenges to the accuracy of the figures used to determine whether Colorado depleted the river between 1997 and 1999. The Special Master concluded that Colorado was in compliance during 1997–1999, in the process relying upon Kansas' own figures. Fourth Report 30–31. As far as we can tell from the briefs, these issues are mostly moot.

The passage of time will produce more accurate resolution of disputes in the first and third categories (and any of those in the second that arise again in the future). The parties will learn more about matters relevant to their resolution, namely, the H–I Model's strengths, weaknesses, and methods of monitoring and measurement. That is why the Special Master recommended that we retain jurisdiction over this case and permit him to take up lingering issues at a future date. *Id.*, at 135–136, 139. We accept that recommendation and overrule Kansas' objection.

The Special Master also recommended that experts for the two parties confer, *e.g.*, *id.*, at 91–92, and he expressed the hope that expert discussion, negotiation, and if necessary binding arbitration, would lead to resolution of any remaining disputes. *Id.*, at 135–136. We express that hope as well.

VII

For these reasons, we overrule all Kansas' exceptions. We accept the Special Master's recommendations and recommit the case to the Special Master for preparation of a decree consistent with this opinion.

It is so ordered.

SUPREME COURT OF THE UNITED STATES

No. 105 Orig.

STATE OF KANSAS, PLAINTIFF *v.* STATE OF COLORADO

ON BILL OF COMPLAINT

[December 7, 2004]

JUSTICE THOMAS, concurring in part and concurring in the judgment.

I join the Court's opinion with the exception of Part II, which concerns whether prejudgment interest should begin accruing in 1985 only on damages thereafter arising (post-1985 damages) or also on damages then owing (pre-1985 damages). As JUSTICE O'CONNOR explained in *Kansas* v. *Colorado*, 533 U. S. 1 (2001) (*Kansas III*), neither the Arkansas River Compact itself nor the common law at the time of the compact's formation allows Kansas to recover any prejudgment interest. See *id.*, at 21–25 (opinion, joined by SCALIA, THOMAS, JJ., dissenting in part). The Court did not adopt that view in *Kansas III*, but neither did it adopt the now-familiar rule that Kansas should be made whole with an award of prejudgment interest spanning the duration of Colorado's breach, from 1950 to the present. See, *e.g.*, *Milwaukee* v. *Cement Div., National Gypsum Co.*, 515 U. S. 189, 195–196, and n. 7 (1995); *West Virginia* v. *United States*, 479 U. S. 305, 310–311, n. 2 (1987).

The Court instead crafted what it viewed as an equitable compromise, designed to apply *sui generis* to these States and their particular dispute, in which prejudgment interest would begin to accrue in 1985. See *Kansas III*, *supra*, at 14–16. Its compromise left open the door to the present litigation, for saying *when* prejudgment interest began to accrue did not answer *on what* the interest was

accruing. The Court therefore must again decide what is too little or too much compensation for Colorado's depletion of the Arkansas. That weighing is as unnecessary now as it was before. Kansas is not entitled to prejudgment interest, and its exception seeks only to compound the windfall it received in *Kansas III*. I therefore agree with the Court that Kansas' second exception to the Special Master's Report should be overruled.

SUPREME COURT OF THE UNITED STATES

No. 105 Orig.

STATE OF KANSAS, PLAINTIFF *v.* STATE OF COLORADO

ON BILL OF COMPLAINT

[December 7, 2004]

JUSTICE STEVENS, concurring in part and dissenting in part.

With the exception of Part II, I join the Court's opinion. In dissenting from Part II, I adhere to the views that we expressed in *Kansas* v. *Colorado*, 533 U. S. 1, 13–16 (2001) (*Kansas III*).[1] In *Kansas III*, in a compromise that was required in order to issue a judgment of the Court, we accepted the views of the CHIEF JUSTICE and JUSTICE KENNEDY that prejudgment interest should run from 1985, the date the complaint was filed. *Ibid.* Like today's majority, I adhere to the judgment reflecting that compromise. Unlike the majority, however, I believe that prejudgment interest should run, starting in 1985, on all damages that accrued after Colorado "knew or should have known that it was violating" its compact with Kansas—*i.e.* from 1969. *Id.*, at 15, n. 5. Such a result best respects the reasoning behind our conclusion in *Kansas III* that prejudgment interest is an appropriate component of the award of damages.

In *Kansas III*, recognizing that a monetary award does not fully compensate for an injury unless it includes an interest component, we affirmed the Special Master's determination that the unliquidated nature of Kansas'

[1] *Kansas III* was predated by *Kansas* v. *Colorado*, 514 U. S. 673 (1995), and *Colorado* v. *Kansas*, 522 U. S. 1073 (1998).

claim did not by itself bar an award of prejudgment interest. *Id.*, at 14. Nevertheless, equitable concerns persuaded a majority of the Court to overrule the Special Master's determination that prejudgment interest should begin to run in 1969, the date on which Colorado first knew, or should have known, that it was violating the Compact. Although we did not explicitly discuss the point in our opinion, we also agreed with the Special Master's decision to exclude from the principal amount on which interest would run any damages that had accrued prior to 1969.[2]

The methodology that led to that conclusion was the Master's appraisal of the equities—in his judgment, interest should not be imposed on the portion of the damages award that was attributable to relatively innocent conduct that occurred before 1969. See Third Report of the Special Master 106–107 (hereinafter Report) ("The general lack of knowledge in the early years about pumping in Colorado and its impacts along the Arkansas River served to protect Kansas during the liability phase of the case against a claim of laches. The same degree of fairness, I believe, should now relieve Colorado of the obligation to pay full

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[2] Kansas had objected to the Master's refusal to award interest on all damages accruing after 1950. See Brief for Plaintiff in *Kansas* v. *Colorado*, O. T. 2000, No. 105, Orig., p. 25, n. 8. Although we did not discuss Kansas' exception to the Special Master's determination regarding the total amount of damages on which interest would run, we overruled the objection and thereby approved the Master's selection of the period after 1968 as the appropriate measure of damages on which interest should be paid. See *Kansas* v. *Colorado*, 533 U. S. 1, at 14 (2001); see also Third Report 106–107 (explaining that Colorado's awareness of its breach was central to the determination that interest should run on post-1968 damages). Today, the Court explains why it would be inequitable to give Kansas the relief that would be the equivalent of sustaining an objection that we overruled three years ago, but does not explain why we should not accept the Special Master's original determination that all post-1968 damages should bear interest.

interest rates on damages from depletions during 1950–68 period . . ."). But the Master did find that Colorado was required to pay interest on damages that occurred between 1969 and 1985. See *ibid.*; see also Brief for United States in Opposition to the Exceptions of Kansas and Colorado in *Kansas* v. *Colorado*, O. T. 2000, No. 105 Orig., p. 27 ("For the period from 1969 to the date of judgment, the Master recommended that Kansas be awarded prejudgment interest"). Our opinion did not reject that portion of his judgment, and did not contain any suggestion that he had erred in that respect. See 533 U. S., at 12, 14. The happenstance that we selected, as a compromise, the date the complaint was filed as the date on which interest should begin to accrue should have no bearing on the principal amount of damages that gave rise to the interest obligation. Thus, I believe that the Special Master's Fourth Report erred in its conclusion that we meant to limit the principal amount of damages to those that occurred after 1985.

Surely if this were an ordinary tort case involving a single harm-causing event, an award of prejudgment interest would apply to the entire damages recovery, not just to the portion that resulted from events occurring after interest began to accrue. See *Funkhouser* v. *J. B. Preston Co.*, 290 U. S. 163, 168 (1933). Indeed, were this an ordinary case, we would no doubt have awarded prejudgment interest in the entire amount that Kansas requested in *Kansas III*. This, however, is a unique case in which unusual equities necessitated a compromise designed to resolve a dispute between two States. Thus, I agree with the Majority that the Special Master was correct in rejecting Kansas' argument that the principal on which interest should run should be "the nominal damages occurring from 1950 through 1984." App. to Fourth Report 15.

However, the fact that Kansas' request represents too

large a measure of damages does not convince me that Kansas is entitled to *no* interest for damages prior to 1985. Nothing in our *Kansas III* opinion compels such a result. In my view, the proper measure of damages on which Colorado owes Kansas interest is the entire amount attributable to the time that Colorado knew, or should have known, that it was violating the compact. That date is 1969—the date that the Special Master initially chose and that we implicitly accepted as appropriate in *Kansas III*. Choosing 1969 as the initial date for the damages period not only has the benefit of respecting our affirmation of the methodology in the Special Master's Third Report, it also results in a total damages sum that is less than the $38 million the Special Master originally awarded.

Accordingly, I would sustain Kansas' second objection to the Special Master's Report, but only insofar as it applies to post-1968 damages.